

REMARKS

Claims 1-4 are pending in the application, with Claims 1 and 3 being the independent claims. Claims 1 and 4 are rejected under 35 U.S.C. 112, 2nd paragraph. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim (U.S. 6,628,974) in view of Iwata et al. (U.S. Patent 5,723,959). Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Iwata and further in view of Toba (U.S. Patent 6,438,392).

Claims 1 and 3 are amended as set forth below to designate the word “same” in line 20 of Claim 1 and line 9 of Claim 3 as the “sub-body drive motor”. Claims 1 and 3 are also amended to eliminate “or” in the claims. These amendments are believed to overcome the §112, 2nd paragraph rejection.

Claims 1 and 3 are further amended to clarify the inventive features and to further distinguish the claims from the cited references. The amendments to Claims 1 and 3 recite that driving of the sub-body drive motor is discontinued after driving said motor for at least more than one cycle of the motor when the measured amount of motor drive current is greater than a predetermined threshold value and the sensor means senses neither one of a fully open status and a fully closed status of the sub-body. Support for this amendment is provided in the existing specification (Page 10, line 23-Page 11, line 11; and Fig. 5, Steps 500-514).

Lim discloses a folder operating system for a cellular phone which can open and close the folder. Iwata discloses a power window driving control device, largely associated with the safety of operation of the power window so the window does not continue to drive closed when a foreign object or person is caught between the window glass and the door frame.

With reference to the rejection of Claims 1, 3 and 4, Applicants respectfully submit that Lim and Iwata do not provide any motivation for their combination. Besides pertaining

to completely different fields, Iwata discloses a driving control system that senses whether an object is in the path of a window to prevent closure on a foreign object (see Col. 2, ln. 30-35), mainly for safety concerns. The present invention is aimed at providing a control system for opening and closing a folder-type mobile terminal, for convenience.

The Examiner states that Iwata teaches a mechanism that controls operation of an object, and this mechanism would be applicable to the sub-body of a foldable cellular phone. This characterization is extremely broad; a mechanism that controls operation of an object is every mechanism; that is what mechanisms do. To view Iwata in this way would allow combination of references from any and all fields. *Particular* reasons that a skilled artisan would combine the components must be shown. *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

In this case, that means finding a particular reason a skilled artisan would combine a driving mechanism for a power window in an automobile to prevent crushing an object in the closing window, with a driving mechanism for opening a sub-body of a cellular phone. On its face, the combination is a mismatch. The components and circuitry in a cellular phone are drastically different from those in a car door. And further, it is readily apparent that the components used in a car door would not be applicable nor function as needed in a mobile terminal. It follows that no one would be motivated to combine technology from the two divergent fields.

In addition, the motivation behind Iwata and the instant application differ as well. Iwata is motivated by safety concerns; the present invention, by convenience. It can even be said that the two are at odds; what is safe is often not convenient and what is convenient is often not safe. Again, there is no motivation or reason to combine a power-window-safety-drive mechanism with a powered sub-body for a mobile terminal.

Without the requisite motivation to combine Lim with Iwata, the Examiner has not shown all the limitations of Claims 1, 3 and 4 in the prior art. Lim alone is insufficient as it lacks a current sensing unit as recited in Claim 1 and does not teach or suggest measuring motor driving current and discontinuing to drive the sub-body drive motor as recited in the Claim 3.

Even if there was a motivation to combine the references, they still do not teach all the limitations of the claims. Lim does not consider the case that inevitable obstacles interrupt a driving motor. Iwata merely discloses detecting the current flowing to a motor and cutting the power. Both references, alone, or in combination, fail to consider the step of automatically cutting a motor off after driving the motor for at least more than one cycle of the motor when the measured amount of motor driving current is greater than a predetermined current threshold value and when a sensor means senses neither a fully opened status or a fully closed status of the sub-body, as recited in amended Claims 1 and 3.

The present invention discloses at least two technical features not present in the cited prior art. The first is the step of discontinuing to drive a motor when the measured amount of motor driving current is greater than a predetermined current threshold value *and* a sensor means senses either a fully open or closed status of the sub-body. Neither Lim nor Iwata discloses an open sensor. Further, according to Iwata, the power-off mechanism operates to stop the closing motion only when motor current is high and the window is not fully shut. This does not render obvious a mechanism for cutting off power when current is high and the window is fully closed.

The second feature not shown in the cited references is the step of discontinuing to drive the sub-body drive motor, after driving the motor at least more than one cycle of the

motor, when the measured amount of motor driving current is greater than the predetermined current threshold value *and* a sensor means senses neither a fully open or closed status of the sub-body. Therefore, the present invention controls the motor driving current while considering the amount of motor driving current *and* the opening and closing of a folder (see p. 10, line. 26 – p. 11, line 4 of the Specification).

It is respectfully submitted that Claims 1 and 3 are allowable over the cited references, taken alone or in combination. Because Claims 2 and 4 depend from Claims 1 and 3, Claims 2 and 4 should also be allowable, at least for the above reasons.

Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,



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